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Amendment for the Occurences of *Calicnemia eximia* (Selys, 1863) and *Orthetrum testaceum* (Burmeister, 1839) in Taiwan (Odonata: Platycnemididae, Libellulidae)

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Abstract: The status of *Calicnemia eximia* (Selys, 1863) and *Orthetrum testaceum* (Burmeister, 1839) in Taiwan is reviewed based on the examination of voucher specimens and distributional patterns. Both species are considered doubtfully recorded from Taiwan and are therefore excluded from the Taiwanese fauna.

Key words: Oriental region, damselfly, dragonfly, fauna, doubtful records

Introduction

According to Tsou (2023), the Odonata fauna in Taiwan comprises around 160 species. However, the exact number of species is still unclear because new records of species (Ma et al. 2022; Hu et al. 2023; Lee et al. 2024), corrections of misidentifications (Hu et al. 2021; Hu & Futahashi 2023; Yeh 2023; Yeh & Hu 2023), and taxonomic changes (Kosterin 2023; Lin 2023; Schneider et al. 2023) published in the last few years indicate that the fauna is still not fully understood. Among the recorded species, the records of *Calicnemia eximia* (Selys, 1863) and *Orthetrum testaceum* (Burmeister, 1839) are highly doubtful as no further records have been published since the first reports (Fraser 1936; Lieftinck et al. 1984). The present study investigates the status of these two doubtful species through voucher specimen and distribution patterns in Taiwan.

Materials and methods

The examined specimen of *C. eximia* was deposited at the Natural History Museum of Denmark (NHMD). The voucher specimen of *O. testaceum* was not examined, as the original report did not include any specimen information (Fraser 1936). The photos were taken using a Canon EOS R7 with a Canon RF 100mm F2.8L Macro IS USM lens. The images were stacked using Helicon Focus 8 and subsequently edited in Adobe Photoshop CS5 to remove the background. The data used to establish the distributional patterns of both species were gathered from published references and all iNaturalist (https://www.inaturalist.org/) records of *C. eximia* and *O. testaceum* as of January 1, 2025. The iNaturalist dataset includes 167 records of *C. eximia* and 3,313 records of *O. testaceum*.

Results and discussion

美姿琵蟌

***Calicnemia eximia* (Selys, 1863)**

(Figs 1–2)

Material examined: 1 male, Syd-Formosa 10-10-02. / Coll. Esben-Petersen / Calicnemia eximia Selys det. MA Lieftinck 1981 / I do not know the species and am not able now to make out its true position F. Ris (NHMD).

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Comments: Lieftinck et al. (1984) first reported *C. eximia* from Taiwan based solely on one specimen deposited at NHMD, but no further collecting records have been published thereafter. The voucher specimen is part of the collection of Esben-Petersen, labelled as "Syd-Formosa," meaning southern Taiwan. However, Esben-Petersen apparently never visited Taiwan, as most of his work on Taiwanese fauna relied on the collection of Hans Sauter (e.g., Esben-Petersen 1912, 1913). The labels also do not resemble typical labels written by Sauter, which usually include a more specific locality name such as "Anping,", are printed rather than handwritten, and bear his name. This raises doubt about the origin of the specimen. Additionally, according to both published references and iNaturalist data, *C. eximia* is widespread in the Indo-Chinese region, with its easternmost population recorded in Guangxi, China (Zhang 2019). The wide distributional gap between Guangxi and Taiwan further suggests that the Taiwanese record is dubious. Based on the atypical labeling and widely separated distributional pattern, I hence exclude this species from the Taiwanese fauna.

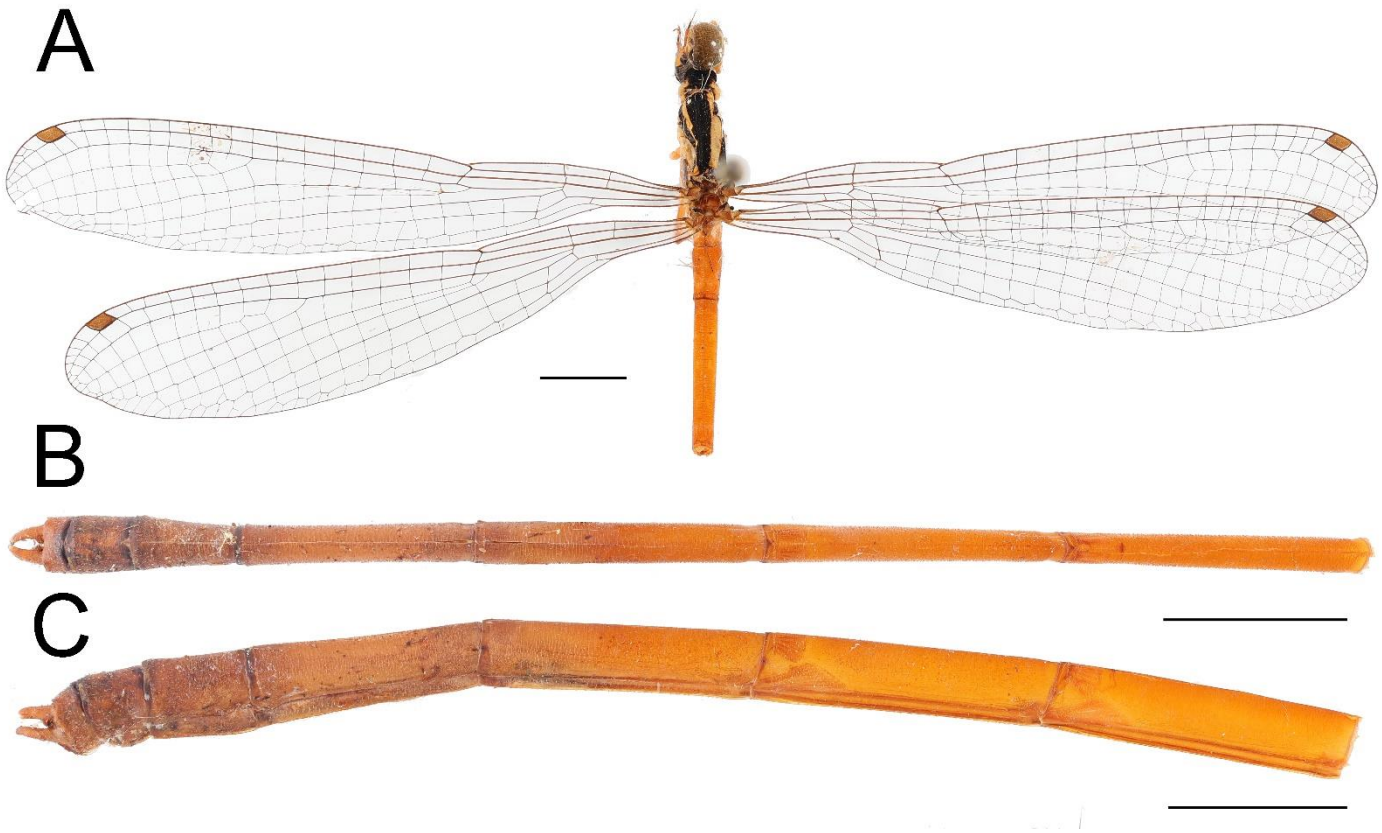

Figure 1. The voucher specimen for the record of *Calicnemia eximia* (Selys, 1863) from Taiwan. A, Dorsal habitus; B, abdomen, in dorsal view; C, abdomen, in lateral view. Scale bar: 3 mm.

赭黃蜻蜓

***Orthetrum testaceum* (Burmeister, 1839)**

Comments: Fraser (1936) first listed *O. testaceum* from Taiwan and stated that the species occurred from Burma to the Philippines and Formosa (Taiwan). However, no specimen was mentioned in Fraser (1936), and there have been no additional records since his publication. The species is widespread in the Oriental region but the only Chinese records, from Sichuan and Yunnan (Wilson 2011), remain dubious and are distant from Taiwan. Although the species is found in the Philippines, which is geographically close to Taiwan, its population appears to be restricted to areas south of central Luzon, based on iNaturalist data. Given the lack of a voucher specimen and the distributional pattern, I exclude this species from the Taiwanese fauna.

Figure 2. The voucher specimen for the record of *Calicnemia eximia* (Selys, 1863) from Taiwan. A, head, in dorsal view; B, head, in frontal view; C, habitus, in lateral view; D, the attached labels. Scale bar: A–B: 1 mm; C: 3 mm.

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臺灣產美姿琵蟌與赭黃蜻蜓分布紀錄之訂正（蜻蜓目：琵蟌科、蜻蜓科）

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摘要: 本文透過標本檢查與分佈模式重新探討美姿琵蟌 (*Calicnemia eximia*) 與赭黃蜻蜓 (*Orthetrum testaceum*) 在臺灣之分布紀錄，這兩個物種都被認為是可疑紀錄，隨後排除在臺灣的動物相之外。

關鍵字: 東方區、豆娘、蜻蜓、動物相、可疑紀錄

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人面蜘蛛捕食脊椎動物之短記

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摘要：本文記錄人面蜘蛛(*Nephila pilipes*)捕食脊椎動物的現象，並發現牠們處理獵物的方式有別於常見模式。我們推測結網型蜘蛛在面對大型獵物時，可能具備評估捕食該獵物對自身帶來威脅程度的能力，並因此調整處理獵物的順序。

關鍵字：廣食性捕食者、古氏草蜥、圓網蜘蛛

蜘蛛作為一種廣食性捕食者，其捕食的對象包括魚 (Nyffeler & Pusey, 2014)、蜥蜴 (Bauer, 1990; O'Shea & Kelly, 2017)、蛇 (Jorge et al., 2016)、鳥類 (Brooks, 2012) 和小型哺乳動物 (Nyffeler & Knörnschild, 2013)。不同功能群的蜘蛛能使用不同的方式捕食脊椎動物，例如：伏擊型與坐等型蜘蛛利用等待、截擊的方式捕捉經過的獵物，並不依賴大型的圓網來纏繞、捕捉 (Willemart & Lacava, 2017)；結網型蜘蛛則依靠所織出的圓網或結構網來捕捉飛過 (鳥類、蝙蝠) 或掉入的獵物 (Foelix, 2011)，並使用具黏性的蛛絲纏繞獵物 (Nyffeler et al., 2021)。

第一作者於 2024 年 4 月 15 日下午 13 時 51 分在台灣新北市新店區和美山步道目擊到古氏草蜥 (*Takydromus kuehnei*) 掉落在人面蜘蛛 (*Nephila pilipes*) 的網中，並開始觀察記錄。觀察時間持續 15 分鐘，僅拍攝蜘蛛螫咬蜥蜴的初期階段(約 3 分鐘)，後續並未留下影像紀錄。我們發現古氏草蜥掉入圓網的初期，人面蜘蛛先使用螯肢螫咬獵物的尾部並注入毒液(圖一)，且反覆螫咬共三次。當草蜥停止掙扎約 5 分鐘後，才使用蛛絲將其包裹，且包裹後並未再度螫咬。該個體的捕食方式與順序和過去文獻中的記錄略有差異，通常在獵物纏上網後，蜘蛛會先以蛛絲包裹獵物再螫咬一次或數次 (Nyffeler et al., 2021)，我們推測此特殊的螫咬順序，可以使蜘蛛避免被掙扎中的蜥蜴反咬。

回顧文獻，幾乎每個大陸都有蜘蛛捕食脊椎動物的記錄，其中能捕食蜥蜴的蜘蛛大多屬於新蛛亞目 (Araneomorph) 下的人面蜘蛛科 (Nephilidae)、金蛛科 (Araneidae)、巨蟹蛛科 (Sparassidae)、狼蛛科 (Lycosidae) 、櫛蛛科 (Ctenidae) 和行蛛科 (Trechaleidae)和原蛛亞目 (Mygalomorph) 下的捕鳥蛛科 (Theraphosidae) 為主 (Reyes-Olivares et al., 2020)，其中又以人面蜘蛛科、金蛛科等具有大型圓網的類群為大宗。在本次觀察紀錄中，蜥蜴受到蜘蛛螫咬後被蛛絲包裹，屬於捕食性死亡，而非受困過久後的脫水、力竭所導致的非捕食性死亡 (Nyffeler & Knörnschild, 2013)。

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圖一、人面蜘蛛 (*Nephila pilipes*)螫咬古氏草蜥 (*Takydromus kuehnei*)的尾巴。

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Notes on the predation of vertebrates by *Nephila pilipes* (Fabricius, 1793)

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Abstract: This short note documents the predation of *Nephila pilipes* (Fabricius, 1793) on vertebrates and the unusual way it handles prey. We speculate that this orb-weaving spider may have the ability to evaluate the threat level of large prey and adjust the order of prey handling accordingly.

Keywords: Generalist predator, *Takydromus kuehnei*, Orb-weaving spider

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臺 灣 昆 蟲 同 好 會

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本會為臺灣昆蟲(含蛛形)愛好者所組成，廣納研究同好為會友，以定期與不定期方式舉辦各種研討聚會、發行昆蟲(含蛛形)自然史相關觀察研究期刊，凝聚全臺愛好者，以促進我國昆蟲、蛛形自然史之發展。

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